CHRONIC KIDNEY DISEASE GUIDELINE
STAGE 4
URGENT

Your patient, _____, has an estimated Glomerular Filtration Rate (GFR) of _____ ml/min/1.73m^2 (i.e., Normal > 90) which was calculated by using the modified MDRD equation. This may indicate Stage 4 kidney disease as defined by the KDOQI guidelines developed by the National Kidney Foundation. Such a GFR reading may indicate an advanced stage of kidney disease and a patient with a high likelihood of requiring dialysis in the near future.

If this patient already has been identified as having chronic kidney disease of known cause, please proceed to the GOALS OF TREATMENT section below. If the patient does not have known CKD, you should consider the following FURTHER EVALUATION of your patient at their next visit*.

1. Repeat a serum creatinine and estimated GFR in 1-2 weeks to see if kidney failure is acute
2. Check for symptoms of urinary tract disease
3. Check blood pressure and for a history of hypertension
4. Check urinalysis for protein or blood.
5. Obtain a spot urine for protein/creatinine ratio.
6. Check whether patient is on a nephrotoxic medication, particularly NSAIDS, including cox 2 inhibitors.
7. Renal ultrasound to rule out obstruction.

***THIS DEGREE OF KIDNEY FAILURE REPRESENTS AN ABSOLUTE INDICATION FOR NEPHROLOGY CONSULTATION IN MOST PATIENTS**.

GOALS OF TREATMENT (IF stable CKD)

ASSESS PROGRESSION OF CKD
Measure serum creatinine, estimated GFR and urinary microalb/creatinine ratio every 3 months.

BLOOD PRESSURE < 130/80 or <125/75 (if proteinuria >1gm/d or U_{prot}/U_{creat} >1).
Preferred agents are angiotensin converting enzyme (ACE) inhibitors [or angiotensin receptor blockers (ARB)] and thiazide diuretics. Additional medications may be needed. Kidney function should be rechecked 14 days after starting an ACE inhibitor. Up to a 30% increase in creatinine may be seen initially and is acceptable. If this is exceeded, REFERRAL to a nephrologists is indicated.

ANEMIA
Check hemoglobin four times a year. Many of these patients will have anemia. If Hgb <11gm/dl, check for occult blood loss and iron deficiency and treat if found. Many patients may need parenteral iron therapy. In iron replete patients with persistent anemia, consider erythropoeitic therapy.

CARDIOVASCULAR DISEASE
Patients with CKD or microalbuminuria are at increased risk of cardiovascular events. They are a target for risk factor intervention (i.e., LDL<100, weight loss, proper diet, exercise, smoking cessation).

BONE METABOLISM
Check calcium, phosphate and Parathyroid hormone at least once a year. You may want to consider referral to a nephrologist for abnormal values.

RENAL REPLACEMENT THERAPY
The options of hemodialysis, peritoneal dialysis and renal transplantation should be discussed with the patient. For patients favoring hemodialysis, placement of an arteriovenous fistula should be considered,

especially if the GFR is <20 ml/min.

PATIENT EDUCATION

Patient education materials and patient education classes on living with kidney disease can be obtained from The National Kidney Foundation of Western New York (Tel: 716-835-1323). Patient education classes are highly recommended for all Stage 3-5 Kidney disease patients and are a covered benefit of most Western New York health insurers.